REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION	1b. RESTRICTIVE MARKINGS
UNCLASSIFIED	

AD-A214 911

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R(S)

3. DISTRIBUTION/AVAILABILITY OF REPORT

Approved for public release;
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5. MONITORING ORGANIZATION REPORT NUMBER(S)

AFOSR. TR. 89-1487

6a. NAME OF PERFORMING ORGANIZATION	6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION
University of Maryland		Air Force Office of Scientific Research

6c. ADDRESS (City, State, and ZIP Code)	7b. ADDRESS (City, State, and ZIP Code)
Baltimore County Baltimore, MD 21228	Building 410 Bolling AFB, DC 20332-6448

8a. NAME OF FUNDING/SPONSORING ORGANIZATION	8b. OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
AFOSR	NM	AFOSR-87-0112

8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS			
	PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO	WORK UNIT ACCESSION NO
Building 410 Bolling AFB, DC 20332-6448	61102F	2304	A9	

11. TITLE (Include Security Classification)

NONLINEAR HEAT TRANSFER AND WAVE MOTION

12. PERSONAL AUTHOR(S)

Professor James M. Greenberg

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
FINAL	FROM Feb 87 TO 31 Aug89		

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

The principal of this research for the past twelve months has been on transport processes and in particualr has focused on properties of Discrete Velocity Models on the Boltzmann equation. This work has been reported at a meeting at the IMA in March and in colloquia at Carnegie Mellon University and Duke.

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20. DISTRIBUTION/AVAILABILITY OF ABSTRACT	21. ABSTRACT SECURITY CLASSIFICATION
☐ UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT. ☐ DTIC USERS	UNCLASSIFIED

22a. NAME OF RESPONSIBLE INDIVIDUAL	22b. TELEPHONE (Include Area Code)	22c. OFFICE SYMBOL
DR. ARJE NACHMAN	(202) 767-4939	NM

DD Form 1473, JUN 86   Previous editions are obsolete.   SECURITY CLASSIFICATION OF THIS PAGE

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THE UNIVERSITY OF MARYLAND

BALTIMORE COUNTY CAMPUS
Department of Mathematics and Statistics

May 17, 1989

Carey M. Fountain, Capt, USAF
Contracting Officer
Department of the Air Force
Air Force Office of Scientific Research (AFSC)
Bolling Air Force Base, DC 20332-6448

Dear Capt. Fountain,

Re: Progress Report on AFOSR 89-0101
Principal Investigator - James M. Greenberg

The following papers were completed under this grant and its predecessor AFOSR 87. All of these have been sent to my program director, Dr. Arje Nachman.

1. Continuum Limits of Discrete Gases, Arch. Rational Mech. and Anal. 105, (1989) 367-376.

2. Hyperbolic Heat Transfer Problems with Phase Transitions, in Nonlinear Hyperbolic Equations - Theory, Computations Methods, and Applications, Notes in Fluid Mechanics Vol. 24 (1989), 186-192.

3. Surging Glacial Flows, IMA J. of Applied Mathematics (accepted and to appear).

4. Decay Theorems for the Broadwell Equations, Arch. Rational Mech. and Anal. (submitted).

5. Collisionless Solutions to the Broadwell Equations, IMA volume on Hyperbolic Problems (to appear).

No new funds were delivered in FY 89 and residual funds were carried over until August 89 so that the principal investigator could support one of his Ph.d students, Ms. Lara Aist. Ms. Aist was a co-author with Greenberg on item 4.

The principal thrust of my research for the past twelve months has been on transport processes and in particular has focused on properties of Discrete Velocity Models on the Boltzmann equation. This was one of the tasks proposed to the Air Force in 87. This work has been reported at a meeting at the IMA in March and in colloquia at Carnegie Mellon University and Duke.

Sincerely,

James M. Greenberg, Chairman
Department of Mathematics &
Statistics

JMG/mw

cc: Arje Nachman

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